

## ABSTRACT

In a transfer apparatus to which MIMO-OFDM is applied, a data transmission method and a data reception method are provided in which, even when there are frequency errors varying among 5 transfer paths, the precision of estimation of an inverse propagation coefficient function can be improved, thereby making it possible to suppress a degradation in characteristics. Among symbols composed of a plurality of subcarriers orthogonal to each other, the transfer apparatus uses, as a synchronization symbol, 10 a symbol in which predetermined amplitudes and phases are assigned to a plurality of subcarriers spaced at predetermined frequency intervals. The synchronization symbol is divided into transmission antennas to generate a plurality of synchronization subsymbols, which are in turn simultaneously transmitted from a 15 plurality of transmission antennas. A reception apparatus estimates a frequency error for each transfer path based on synchronization subsymbols included in signals received by a plurality of reception antennas, and based on the estimated frequency errors, corrects the received signals.